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BUREAU OF BIOLOGICAL SURVEY

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FIELD DIARY

Mr. Norman Bailey

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July 20, Sunday.

Had a few specimens to make up and set a lot more traps. Wrote up notes & went in skinning. Very hot and dry and crops are suffering.

July 21 - Went down to Lawrence Lake, just above Brownsville and explored the marsh near the lake and got a good view from above on the hill.

A nice little log cabin is located on a point above the road overlooking the lakes which are closed to hunting and are easily protected. There are several bodies of water but the need of dams to throw the creek into them instead of draining them is needed, evidently.

July 23 Drove up to Winona and  
found Ray Steel trying to reach  
me on the telephone to go up  
to Wabasha for the conference  
with the Congressional Committee  
on Conservation. Frederic  
Walcott of Conn. is chairman  
and Senator Harry B. Hawes of Wis.  
and Kie Pitman of Nevada  
are members.

Found the men not all there  
so had to wait till July 25  
for the hearing which took  
the whole day.

The meeting was at the  
summer cottage of Mr.

Geoth, of Chicago who  
made a delightful host.  
Others present were Mr. Piddington  
Ray Steel, Uhler and myself  
from the Biological Survey.

Mr. Bates of the Forest Service,  
Capt Culler and Mr. Shewaker  
of the Bureau of Fisheries,  
A couple of senators from Minnesota  
and some of our wardens.  
Also Mr. Bell of McGregor, Iowa.

In the forenoon of  
July 25 Gen. Brown, chief of  
Army Engineers stopped on  
his way down the River  
on the steamer General Allen and  
had a pleasant conference with  
the committee.

When he left the committee was  
called to order by Mr. Walcott  
and Mr. Riddington asked to tell  
about the refuge.

He gave its history and  
aims and objects and some of  
the administrative problems,  
then asked me to tell about

its animal life, past,  
present and future.

I began with 1870 when I  
first came up the valley in a  
covered wagon, when passenger  
pigeons, prairie chickens and  
white tail deer were abundant  
and then told of what there is  
on the refuge and what can  
be brought back.

Then Mr. Lehler told of  
the duck foods and aquatic  
vegetation of the refuge and  
later we were asked some  
questions.

Mr. Culler of the bureau of  
fisheries made wild statements  
of how many hundreds of young bass  
had been taken from the stomachs  
of great blue herons and wanted  
to have them all killed off.  
Mr. Lehler gave some real figures

on their food which showed  
them only little harmful to good  
fishes and I cited their value in  
destroying packrat gophers and  
mice in some of the western states.

The food of hawks was diseased.  
the predatory animals were asked  
about.

Returned to Winona and  
caught bus to La Crosse late  
in evening.

July 26 Left La Crosse after  
noon and went to La Crosse  
and down river to Ferryville  
but finding no place to stay went  
on to Lynxville where we found  
convenient quarters near the refuge.  
This is at the lower end of the  
Winuskies bottoms but we can  
run back to Ferryville in the morning  
to start.

July 27, Found the Game warden at Ferryville and planned a trip for tomorrow, then returned to Lynxville and set traps, took photographs, wrote up notes and got ready for next work tomorrow which will be Monday.

July 28, Went to traps before breakfast and then ran up to Ferryville where the refuge warden, Hurley C. Lawrence, went with us with his boat and waded an all day creek of the upper part of the Wm. Creek Bottoms, following the Wm. Creek Slough around the closed area and then down through Garden Slough through the meadows of it and all both sides into the marshes and lakes and lotus beds where the

Ducks and muskrats live.

The Bottomlands are large and almost all in the refuge so they form a well defined area for administration and development. They include two large areas entirely closed to hunting and extensive areas outside where hunting and trapping are controlled or open in accordance with state laws.

The refuge area is somewhat different from that of the Wabasha and La Crosse regions; more uniformly low and practically all subject to flood in high water.

There is much good timber of the same bottomland trees as farther north but little oak or basswood. Silver maple, birch, elm, ash, box elder,

cottonwood and willows are the main timber of which there is abundance of cottonwood and willow along the shores. Nut trees are almost entirely lacking and there is doubt of Pecan trees doing well on such low bottoms. Squirrels are there but apparently it is their work eating the bark from silver maples. One fox squirrel was seen and a few grayed trees.

The surrounding bluff and gulch country is better for squirrels.

The marshes and lakes and sloughs cover extensive areas and are ideal for wood ducks, other ducks, muskrats and such game.

The lakes are generally full of lotus (*Nelumbo lutea*) now in full flower and a wonder of beauty and interest. The flowers often grow out on dry ground or solid mud or sand and stand four feet high on waving stems, the beautiful fragrant flowers eight or ten inches across and the rich satin green leaves one to two feet across. Few flower displays are more beautiful and the abundant nuts from their seeds are valuable duck food.

Around the shores and over extensive marshes the tall three cornered sedge, *Scirpus fluvialis*, grows densely and often higher than our heads. its bulb

71  
bearing base or rootstalk  
forming one of the very important  
muskrat and duck ponds.

*Scirpus validus* grows in places  
but less abundant than farther north,  
while *beauregardii*, *bulrushes*  
and many other sedges fill up  
the marsh spaces. There is  
less grass than farther north.

The three common *Sagittarias*  
are abundant, *Potamogetons*  
of many types fill the water in places.  
*Lemna* and other duck weeds are  
abundant, wild rice was seen  
in only one little strip along  
a shore and it was not half grown.

*Najas* is very abundant in  
almost pure stands for miles along  
the margins of sloughs and lakes  
or over some whole lakes.  
It is a glorious plant and

forms one of the most attractive  
flower displays I know of.  
The thousands of blossoms  
waving on stems two four feet  
tall and often 4 to 10 inches across  
are delicate pale yellow with orange  
tipped centers and delicious fragrance  
which the great leaves,  $1\frac{1}{2}$  to  
 $2\frac{1}{2}$  feet across are like green  
velvet and those standing erect  
hold silvery globules from the  
morning dew. These in the  
water would easily hold up a  
rail and probably a little green  
heron. My field glasses  
laid on one did not make a  
dent in it.

The seeds from their numerous  
cups must furnish a lot of food  
for ducks and other life.

Collected 3 species of insects for lunch.

July 29  
Covered the lower half of  
the Wimmerick Bottoms by boat  
making numerous short trips  
in & marshes and lakes that  
we could not enter by boat.  
Went clear around and partly  
through the closed area which  
is not quite so large as the  
one explored yesterday, about  
1000 acres roughly while  
yesterday the closed area was  
near 2500 acres.

It is the same type of  
country, low forest and  
much marsh and lake or slough  
land, wonderful muskrat and  
water fowl country.  
Lots of food plants and great  
numbers of muskies, frogs,  
crawfish, fish and turtles.  
Saw an 800 foot eel

hauled and the game fish,  
bass of 3 kinds, sunfish, pike,  
and pickerel put back while the  
shupshad, red horse, carp  
and dogfish were taken to  
market. They would not all  
together run over 200 or 300  
pounds of fish and I should  
think two thirds of these went to  
market.

They gave me a shupshad,  
a skipjack and a moorage to  
cook for lunch. The shupshad  
was delicious, the moorage fairly  
good, the skipjack good but  
soft and bony. I broiled  
them on sticks and they were  
the best of their kind.

Have not tried frogs or crawfish yet.  
They had two large soft shelled turtles  
and two hard shelled in the net.

Beautiful weather.

Zanesville, Wis. July 30, 1930

*Quercus bicolor*  
" *alba*  
" *rubra*  
" *macrocarpa*  
" *coccinea*  
*Betula alba*  
" *nigra*  
*Acer saccharinum*  
" *dasycarpum*  
*Lilba americana*  
*Ulmus americana*  
" *fulva*  
*Juglans virginica* & *complanata*  
*Ostrya americana*  
*Fraxinus*  
"  
*Carya alba*  
" *poecina*  
*Juglans nigra* & *cuneata*  
*Populus deltoides*, *trémuloides*, *grandidentata*  
*Salic* 5 species  
*Hackberry*

July 30

Took a day to write up reports  
and do some collecting.

Austin got a *Synaptomys* and  
a *Lepus*. Last night we had  
more *Microtus austriacus*, 3 very  
large ones, weighing 50, 47, and 44  
grams.

Set more traps, hoping to get  
*Eutamias* and *Sorex*.

A cool and perfect day.

*Crabapple*,  
*Flamapple*,  
*Cornus alternifolia*  
" *coccinea*

*Corylus*  
*Amygdalus*  
*Xanthoxylon*  
*Staphylea*  
*Rubus* 3  
*Ribes* 3  
*Rosa* 2

*Celastrus scandens*  
*Vitis riparia*  
*Ampelopsis*  
*Menispermum*  
*Smilacina*  
*Stertopus*  
*Faleata*  
*Rhus glabra*  
 " *typhina*  
 " *toxicodendron*  
*Ceanothus*  
*Sasaparilla*  
*Spikenard*  
*Ginseng*  
*Acerum*  
*Hepatica*  
*Aquilegia*  
*Thalictrum*  
 Ferns 9  
 Mosses  
 grasses

July 31, Hurley C. Lawrence  
 came down to Lynsville with his  
 motor boat and took us down the  
 river to the lower end of the  
 Harpers Ferry bottoms and all  
 around them and through many  
 of the sloughs and lakes so  
 we got a good idea of the  
 country.

It is rather low and not much  
 above extreme high water.  
 About half of the areas are  
 timber, mainly willow, cottonwood,  
 maple, birch, elm, ash and  
 on a few of the highest spots  
 a few swamp oaks and basswoods.

The lakes and sloughs are  
 generally bordered with the  
 three kinds of *Sagittaria*,  
 river rush, and in places  
 lotus or white water lilies  
 but the lotus is not so abundant  
 or fine as up at Ferryville.

Caught a *Ptilinopus* and Austin  
caught 3 bay grown *Synaptomys*  
and lots of other mice & bladders -  
Lawrence brought us two *Myotis* from  
Jeffersonville.

Saw a woodchuck on a sand bar  
in middle of a wide slough. He  
was all wet and did not like  
to swim across the other side  
to the woods.

Fox squirrels are mainly on the  
river flats. Gray squirrels mainly  
on the bluffs.

Shot a bullfrog for lunch and  
ate him legs and back and all. very good.  
His stomach contained a young carpfish  
about an inch and a half long and the  
intestinal remains of one that must have  
been 2 inches long.

Three muskrats have been  
closely trapped and are scarce  
but coon and mink tracks were  
common. No wild rice was  
seen and but little grass.  
The muskrats were feeding mainly  
on leaves and stems of *Sagittaria*  
*latifolia* but in one place had  
been eating the flowers and buds of  
lotus.

There would be food for  
a large number of beavers  
but the country is not as  
good for them as farther  
north. There is little open  
dry ground for turkeys and  
prairie chickens but plenty  
of good woodcock, wood duck  
and other water bird range.

A few ducks, teal, sawbill  
and wood ducks were seen.

August 1, 1930

Left Lynxville, Wisconsin  
at 1 P.M. with Oliver Austin  
in his little roadster and  
Michael Prairie DeChene  
inside of an hour, crossed  
the ferry to McGregor, Iowa  
and drove up to the Wild Life  
School on top of the bluff  
overlooking a wide stretch  
of the Mississippi River  
Bottoms. Found a little  
cottage, "The Nifty", just  
right for us and located  
right there.

Austin decided to go  
back to St. Paul so started  
before dark and expected  
to be in St. Paul before  
midnight.

A hot day.

Aug. 2 Got our baggage  
from express office and  
unpacked and got down  
to work on reports and  
specimens. Saw a little  
of the country and got  
our bearings for next  
work.

Aug. 3. Sunday and very  
hot.  $100^{\circ}$  all day in  
the coolest part of our cabin  
and  $130^{\circ}$  when I laid the  
thermometers outside in the  
sunshine on the grass.  
Wrote letters and some  
on reports. but did not  
try to do much outside

Aug. 4. The Wild Life  
several began at 9 AM  
and I was called on for  
a general outline of the  
help we could give them  
while here for a week.

In evening gave an  
illustrated talk on The  
Animal Life of The Miss.  
Valley Wild Life Refuge  
Wrote an report between  
times.

Aug. 5, M<sup>rs</sup> Gregor, Iowa  
Mr. Reddington, Mr. Stule  
and Capt. Culler came to  
Morning Session of Wild Life  
School and gave talks  
I was asked to preside at  
the morning session.

Aug. 4. Tue = Yr 101  
Mrs. Bailey gave a talk  
on bird studies in morning  
session and I gave talk  
on Grand Canyon in  
evening with lantern slides.  
Attended some important  
lectures by Dr. Pammel  
Dr. Schimel and Mr. Fitzsimmons.

Aug. 7, Mr. & Mrs. Gregor &  
Berkeley State Park beyond  
Strawberry Point, on all  
days trip by auto in  
very rugged, interesting  
country. Great springs  
boil out of the rocks and  
make cold clear trout  
streams and the State trout  
hatchery is located here.  
Many old natural white pines  
occur and some other  
northern plants and a  
collection of small mammals  
would be of great interest.  
Gave talk on beavers  
in evening with motion pictures.

Aug. 8<sup>th</sup> Friday, M<sup>rs</sup> Gregory.  
Was asked to preside at  
morning session of The Wild  
Life School and gave a talk  
on hunting and trapping  
by the boys.

Was asked to preside  
at evening meeting so  
did not get much of my  
writing done but heard  
some good lectures by  
Dr. Pammel and Dr. Schuchert.

Aug. 9 M. C. Ugors, Saturday  
Gave a talk in morning  
on Predatory Animal Control  
taking place ahead of Dr.  
Bode who followed me with  
an excellent talk on Conservation  
of our forests.

Dr. Schmidt gave an excellent  
talk on Surface Geology in Iowa.

We had a bird class  
in the morning from 6 to 7:30  
and went on boat trips to the  
Lotus beds in afternoon 4 to 7  
with Capt. Fred Bell.

A cool and pleasant day  
Evening talks by Dr. Kay on  
glacial geology and singing by  
the Cotton Flower Singers of Miss.

Aug 10 Sunday, McGregor

Breakfasted with the Biechles at their cottage on the Ridge and walked over to the Golf Grounds by the woods trail along a north slope covered with dense vegetation, blackberries, spindlewood, Sassafras and ginseng under the tall trees, many white birches <sup>aspens</sup> and northern plants.

Saw one ruffed grouse and a red bellied woodpecker and other small birds.

The view from the river bluffs is superb, both north and south.

Aug. 11, Monday, M<sup>c</sup>Gregor  
Left M<sup>c</sup>Gregor for Savanna  
at 1:30 P.M. down the river  
about 100 miles and across  
to the Wisconsin side -  
A cold morning & pleasant  
day.

Followed down the lower  
side of the Mississippi River  
to Dubuque but found  
the train went no further  
so had to wait till 7:20  
P.M. for a train to Savanna.

The river bottoms and  
islands are about as at  
M<sup>c</sup>Gregor but generally  
not very extensive.  
Forest and other vegetation  
is rich and dense and  
many fields of lotus and  
Sagittaria and Sedges are  
passed.

Aug. 12 Tuesday, Savanna, Ill.  
Arrived last night at 9:30  
P.M. & came to the Radke Hotel.  
No word from our warden,  
Albert J. Cheney of Billings,  
Iowa who was to meet me  
here. Arrived 10 A.M.  
and we started at once up  
the river along the edges of  
the Wild Life Refuge across on  
the Iowa side & the Military  
Proving Grounds Reservation on  
the Illinois side. Ran up  
to the administrative building  
about 10 miles above Savanna  
and explained to Major Graham  
in charge that I wanted to go  
over the reservation to see what  
kinds of native game it was  
best adapted to. He detailed  
Capt. W. F. Henry to take us  
Mr. Cheney and myself, over

the Reservation which he did in a very satisfactory way, showing us all of it on the mainland and sandy prairies and the edge of the river bottoms.

It contains about 12000 acres, more than half of which is on the prairies, possibly 4 or 5 thousand acres being on the islands and bottomlands of the Mississippi, on the east side.

The uplands are mainly light sand with a flora of eastern Nebraska including prairie plants such as *Rhus trilobata*, *Amorpha canescens*, *Artemisia ludoviciana*, *Grappolum* Sand cherry, *Ceanothus*, *Plantago bractiosa*, *Opuntia vulgaris*, Wild plum, chokecherry, black cherry, grapes, elderberry, *Rhus glabra*, *Gramma* grass and *Andropogon*.

In places there are elms and oaks  
maple, boxelder, ash, birch, aspen,  
cottonwood and willows on low  
ground and junipers on the hills.  
prairie rose and black locust and  
Honey locust.

Meadowlarks - mourning doves  
vesper sparrows and swallows  
were abundant.

A badger den was in the wood,  
3 Weasels, hognoses, were killed last  
winter.

Foxes of both kinds are  
Mink, common,

Skunks - spotted & striped, "

Raccoons "

Moles "

Muskrats abundant

Beaver 2

The Reservation is well  
adapted to Buffalo, elk, antelope  
and deer, and there is a big  
man fence 10 feet high around  
several hundred acres where  
Buffalo, elk and antelope could  
be kept. A thousand white-  
tail deer could find food and  
cover to their liking on the  
upland and bottomlands.  
A few prairie chickens are  
still found on the prairie and  
some ducks on the islands.  
Lots of bobwhite and a few ruffed  
grouse. Wild turkeys would  
do well and were native here  
many years ago.

The islands and bottomlands are well forested with Cottonwood, willows, elms, maples, birch, ash, boxelder and shrubs and vines. Fox Grapes are very abundant.

There are many sloughs and lakes and marshes on the bottoms and wood ducks and other ducks breed. Blue herons, black cranes and little green herons are common. and a few yellowlegs and pied-billed sandpipers were seen and swallows of many species fairly swarm. Kingfishers are common and Crows and wood pewees.

Found old signs of beavers last winter and lots of cuttings and saw a few muskrats and lots of tracks. Coon and skunk tracks are common. So are woodchucks.

Came on up to Bellevue at about 7 P.M. and stopped at the Hotel Wicks for the night.

The river is very low and we could not follow many of the sloughs through the refuge.

No lotus or wild rice seen.

One cave near Saranac, about a mile above. Bluffs not so high as farther north but were abrupt.

Scenery beautiful in many places, especially so at Bellevue.

Night Hawks - a dozen at Bellevue  
Swallows - 300 of all kinds "  
Swifts - abundant "

The islands and bottomlands

Aug. 13, Left Bellevue & am for  
Dubuque by water boat

Sycamore trees near Bellevue  
Pin oaks, big trees on island "  
Pecan, one bearing tree 12  
miles below Dubuque

4 elms

Cottonwoods

Willows

2 maples

Poplars 1

Ash 2 or 3

Lonest 2

Hawberry

At north end of Military reserve  
a large tract of ancient forest of  
magnificent elms, cottonwoods, pine  
oaks, ash, maple and honeylocust  
was valued at \$1,000,000 — now and is  
worth it tho it would not sell  
for that now.

Pine oaks are one of the best wood  
duck foods. Wood ducks also are  
said to eat wild grapes.

Two lotus lakes opposite  
Bull Run, one on Military Reserve —  
one on private land. They died  
have wild rice but it died out,  
supposed to be killed by carp.

The Iowa shoreline is abutted  
with the C.M. & St. P. Ry. along the  
banks. In many places the right  
of way runs from the river to top of  
bluffs and includes valuable  
game land all along from opposite  
Savanna to Wabasha. Why not  
get them to add this to the Wild  
Life Refuge for protection of the  
game with our wardens to  
help patrol and protect it?  
At present no hunting is allowed  
on the right of way and it is  
essentially a refuge.

The bluffs are well timbered with  
oaks, walnut, hickory, Black gum,  
boxelder & numerous berry bushes.  
The trees are cut off between the  
railroad and river where close.

The best thing about the place  
is that it has passed.

The land from Belton to DeBouque  
on the river bottoms and islands that  
is not farm land but good  
timber land is held at 30 or  
40 to 60 or 100 dollars an acre  
according to the stand of timber  
on it. If without timber it has  
little value. The soil is rich  
and timber grows very fast and  
very large.

Arrived at DeBouque at  
11:30 and had to wait for a  
train north till 4 P.M. C. B. & Q.

Up along Wisconsin side  
of river to Prairie du Chevre.  
Good bottomlands and  
islands. A big lake of lotus  
flowers just south of Potosi.

Many lotus lakes

Cassville -

Redwing blackbirds, big flocks

One big Sycamore in Cassville

Received M. C. Grogan 7 P.M.

The best thing about the world

Aug. 14 Went from  
M<sup>c</sup>Gregor over to Prairie  
du Chien and across the  
mouth of the Wisconsin River  
to the Nelson Dawy State  
Park in Wisconsin in P.M.  
Gave talk in <sup>forenoon</sup> ~~evening~~  
on Bird Life of the Wildfowl  
Refuge. Returned to  
M<sup>c</sup>Gregor at 4 P.M.

Aug. 15, Gave talk on  
Bats at Wild Life School  
in morning and a general  
talk on the Wild Life School  
in evening.

Crossed to Island and  
lake on river bottoms with  
Mr. Rose and listed  
birds over there, including  
a flock of 24 Black ducks.

Aug. 14 Saturday,

Went for all day trip  
up river on the steamer  
Capitol as far as Hastings  
at upper end of Winnishick  
and returned to McGregor  
at 6:30 P M.

Talked of Wild Life Refuge  
and its possibilities most  
of day to groups of people  
on the steamer.

We saw the whole length  
of the Winnishick Bottoms  
and had good views from  
the upper shore.

A pleasant day and  
very interesting people,  
including the faculty and  
students of the school.

Aug. 17, Sunday, McGregor,  
Packed up ready for start  
early in morning.

In P.M. drove over to  
Elkader with the Elwells  
and called on Mrs. Bell  
and her mother, Mrs. Preston  
who was born there over 80  
years ago and knows the  
early days of the country  
back to Indian and buffalo days.  
Saw much beautiful farming country  
with good crops and lots of  
hogs and cattle.

Harvest is over and the  
thrashing nearly done.  
Corn is full grown and a  
good crop generally.  
Clover is getting ripe and  
blackberry in blossom.

Aug. 18 Monday, M<sup>c</sup>Geiger,  
Left M<sup>c</sup>Geiger 8:04 AM  
on the C.M. & St. P. for Wivona  
and came slowly with many  
changes up the river valley  
and much of the way up the banks.  
Saw plenty of Lotuk up to near  
La Crasse but none above.  
White and yellow waterlilies were  
abundant at Bearsville  
and La Crasse & above.  
Cardinal flowers abundant  
near Reno on shady bottoms.  
Arrived at Wivona 11:15 AM  
went to Hotel Wivona and to  
the Wild Life Refuge office.

Aug. 19 & 20

Writing reports at Wivona.

Aug. 21 - Finished manual report and gave to Mr. Steele to have it copied.

Went out to Woodlawn Cemetery west of Lake Wivona and saw a *Citellus 13lineatus* in the cemetery and a dead one in the road. Also a Red squirrel and several gray squirrels and a few gray squirrels in town. All are the large, dark bellied hypophaeus.

The red squirrel was the first found this summer. Was chattering noisily in a tree. Many cone scales and cones were scattered over the ground under spruce trees.

Cool and pleasant, Very dry.

Aug. 22 Left Wivona at 11:35  
A.M. and reached St Paul at  
2:35 P.M. up west side of river.

Country very dry, but grain  
all harvested and corn fairly  
well matured. Most of sloughs  
dried up and river very low.  
Hillsides all brown.

At St. Paul went direct to  
Old Capitol Bld. and saw the  
assistant game warden Mr.  
Forrest and arranged for  
taking the beavers as soon as  
the fair is over.

Also saw Fred Surber  
and talked of the mammals of  
the Wild Life Refuge.

Then continued to Minneapolis  
where we went to the Hastings  
Hotel, away out on 12th St  
near Hennepin and located  
for the night.

Aug. 23 Saturday.

Left Minneapolis on bus at 4 P.M. and reached Elk River at 5:15 P.M., and drove out to Chester Hills.

Saw Dr. Roberts in morning and went to Museum and got supplies and Dr. Roberts agreed to find out about tags for beaver tails.

Aug. 24 to 29 at Elk River  
writing reports.

Aug. 30 - to Minneapolis and St. Paul to see Raphael John, Mr. Fraser and Dr. Roberts about field work.

Aug. 31, Sunday,  
Visiting among the old neighbors.

Aug. 31 Sunday at Chesters  
Visited among the old friends  
and neighbors and found some  
new friends among the old residents.  
A hot day, still dry

Sept. 1 Monday -

Left ~~Wheeler~~ Vale at 9 AM and  
drove to Princeton, Mill Lake and  
Grand Rapids, then west to Cass Lake,  
about 225 miles, arriving at 5 PM.

Struck Canadian zone between  
Princeton and Mill Lake where the white  
pine and jack pine begin and spruce  
and tamarack swamps are abundant  
Norway pine and cedar swamps  
and balsam begin at Lake Mill Lake  
and continue the rest of the way.

Most of the old heavy white pine  
and hemlock forest has been cut  
and burned and some of the ground  
chared but it is poor farm land.  
Lots of wild hay grows naturally

but it has little value.

Small grains do well as far as Mill Lake, but not so well beyond though there are some fairly good farms as far up as Grand Rapids. Reforestation is retarded by repeated fires.

Timbering is a thing of the past. Recreation, fur and game are things of the future.

Stopped in many places both in swamps and on uplands to see if any signs of snowshoe hares could be found but they are very scarce.

There are numerous old cuttings of three or two winters back but very few of last winter.

White cedar, aspen, service berry and willow have been cut but more cedar than any other.

Saw a fox squirrel at Mill Lake, ran across the road just ahead of us.

Saw a little deer sign above Aiken.

One ruff grouse had been killed by auto in road.

Lots of crow, black birds and a thousand swallows.

A cold day and raining in morning. Clear and cold at night.

No trace of forest fires and only one peat fire - west of our River.

Sep 1, 3, Tuesday Cass Lake

Saw Supervisor Howard Hopkins first thing in morning and he sent G. L. Fenger with me to inspect tree plantings for rabbit damage on the Chippewa Nat. Forest.

Found many of the first year sets gone and many of those remaining injured or killed by recent hot dry weather.

Most of the little trees a foot high or less have been injured by having the twigs cut off by rabbits or deer 2 or 3 or 4 years ago. Showed him the difference in rabbit and deer cutting and gathered a bunch of twigs cut by each.

No signs of mouse work or gophers or squirrels.

Rabbits are very scarce now and were lost winter but were

About 1925, when great numbers of  
bushes and young trees were killed.  
Most of the small cedars and  
some little pines and spruces were  
then cut and injured, killed.

The rabbits are partial to white oaks,  
bush maple, willow, hazel,  
Rose, shoptony, serviceberry

Deer are partial to bush maple,  
pin cherry, willow, hazel, aspen,  
Service berry, honeysuckle and  
Oeanthus, of which the terminal  
buds are bitten square off and  
leaves of the pin cherry are  
scarcely eaten.

The rabbits cut larger  
sticks and slice them diagonally  
with tooth marks across the middle  
of the cut.

No beaver signs could  
be found around Cass Lake.

Saw Prof. Henry Shirley,  
studying effects of light on  
young trees.

Also, the local game warden,  
Mr. Wright who was going  
up to some beaver country  
above Black Duck.

Red squirrels are beginning to  
cut up pine cones to eat  
but not yet to star.

In P.M. went over to  
Stasea Park and Lake  
and photographed the shores  
of the Mousiepp River.

The Park contains large  
areas of virgin timber,  
largely Norway pine.

Drove south to Deer Park  
and Wadena where  
we stayed over night.

Nearly ran over an old  
hickuffed grouse in middle of  
road. One car passing close on  
his right and we on her left,  
almost simultaneously but she  
never took a step, turned around  
and went back with camera but  
went slow and she ran across  
road and into woods, then two  
half grown young flew up from  
far edge of road and the rest  
of her brood were behind so  
she did not know which  
way to go.

Many are killed in the roads  
but need not be if drivers  
were careful and tried to  
avoid them. A penalty  
should be enforced for killing  
anything with auto.

Found a full grown male  
mink in the road, run over by  
a car today. Saved for specimen.  
A few birds and one cottontail killed  
in road. Yesterday a ruffed  
grouse, frogs and snakes  
birds and rabbits and squirrels.

Sept. 3 Wednesday.

Returned from Wadena  
via Sank Center and St. Cloud  
to Elk River, through mainly  
good farming country along  
the edge of the big prairies.  
Saw a number of large lakes  
not shown on the road map.

Found dead fawn rabbit  
in road run over by automobile  
and skinned for specimen.

Saw several muskrats, ground  
squirrels, gray squirrels,  
cottontails, mice, birds,  
frogs and turtles, and many  
birds run over.

Sept. 4 Thursday, Elk River,  
Packed up ready to start  
for home. Wrote final letters  
and telegrams to close up work.  
Received letter from Steell  
canceling all beaver work  
on refuge.

Sept. 5 Friday, Took N.P.  
train at Elk River, at 7  
PM and changed to C B & O  
at St. Paul, leaving there  
at 8:45 for Chicago

Sept 6, Arrived Chicago 8:10  
AM and left on B & O.  
Capitol limited at 1 PM  
for Washington.

Sept 7 Sunday. Arrived  
Washington 9:30 AM



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